What is Claimed:

1. An apparatus for analyzing an impurity in a liquid for use with a light source, comprising:

a cell coupled to the light source comprised of:

a first mirror at a first end of the cell to receive a light from the light source and pass the light into the cell along a longitudinal axis of the cell, and

a second mirror at a second end of the cell to at least partially reflect the light from the first mirror back along the longitudinal axis to the first mirror;

a first liquid supply device adapted to project a first stream of the liquid between the first mirror and the second mirror and across the longitudinal axis of the cell; and

a detector coupled to the second end of the cell and adapted to determine a decay rate of the light within the cell based on the light passing through the liquid.

2. The apparatus of claim 1, further comprising a polarizer coupled between the light source and the cell.

3. The apparatus of claim 1, wherein the liquid stream is projected freely into the cell.

4. The apparatus of claim 1, wherein the cell is substantially open.

5. The apparatus of claim 1, wherein the liquid stream intersects the longitudinal axis of the cell at a predetermined angle so as to substantially reduce reflection of the light by the liquid stream.

6. The apparatus of claim 5, wherein the angle of intersection is complementary to Brewster's angle.

7. The apparatus of claim 1, further comprising a processor coupled to the detector to determine a level of the impurity in the liquid based on a decay rate of the light within the cell.

8. The apparatus of claim 7, wherein the processor is adapted to determine the level of the impurity in the liquid based on a difference between a first ring-down rate measured at an off-peak wavelength of a profile of the impurity and second ring-down rate measured at a peak wavelength of the profile of the impurity.

9. The apparatus of claim 7, wherein the processor is adapted to determine the level of the impurity in the liquid based on a whole peak profile measurement.

10. The apparatus of claim 1, further comprising:

an optical splitter coupled to the light source to split the light from the light source into a first beam and a second beam, the cell coupled to the optical splitter

a second cell coupled to the optical splitter, the second cell comprising:

a first mirror at a first end of the second cell to receive the second beam and pass the second light beam into the second cell along a longitudinal axis of the second cell, and

a second mirror at a second end of the second cell to at least partially reflect the light from second beam back along the longitudinal axis to the first mirror;

a second liquid supply device adapted to project a second stream of a second liquid substantially free of the impurity into the second cell between the first mirror and the second mirror and across the longitudinal axis of the second cell; and

a second detector coupled to the second end of the second cell and adapted to determine a decay rate of the second light within the second cell.

11. The apparatus of claim 10, further comprising a processor coupled to the first detector and the second detector, wherein the processor is adapted to determine the level of impurity in the liquid based on a difference between the decay rate in the cell and the second decay rate in the second cell.

12. A method for analyzing a trace species in a liquid for use with a light source, comprising the steps of:

emitting a light from the light source;

passing the light through a first stream of the liquid;

measuring a decay rate of the light passing through the liquid; and

determining a level of the trace species based on the decay rate.

13. The method of claim 12, further comprising the step of polarizing the light after the emitting step.

14. The method of claim 12 further comprises the steps of:

splitting the light from the light source into a first beam and a second beam;

passing the first beam through the first stream of liquid containing the trace species;

passing the second beam through a second stream of liquid substantially free of the trace species;

measuring a first decay rate of the first beam passing through the first stream of liquid;

measuring a second decay rate of the second beam passing through the second stream of liquid; and

determining the level of the trace species in the first steam of liquid based on a difference between the first decay rate and the second decay rate.

15. The method of claim 12, wherein determining an absorption spectrum of the trace species in the liquid is based on a difference between a first ring-down rate measured at an off-peak wavelength of a profile of the trace species and a second ring-down rate at a peak wavelength of the profile of the trace species.

16. The method of claim 12, wherein the determining step is based on a first whole peak profile measurement.

17. The method of claim 12, further comprising the step of projecting the first stream of liquid across the light at a predetermined angle.

18. The method of claim 17, wherein the predetermined angle is selected to reduce an external reflection of the light.

19. The method of claim 18, wherein the predetermined angle is about complementary to Brewster's angle.

20. An apparatus for analyzing a trace species in a liquid, comprising:

means for emitting a light;

means for passing the light through a first stream of liquid;

means for measuring a decay rate of the light passing through the first stream of liquid; and

means for determining a level of the trace species based on the decay rate.